
Name of Organization: Lake Erie Alliance, Inc.

Type of Organization: Other

Contact Information: Mr. Terry Yonker

139 Jackson Street

Youngstown NY 14174

Phone: (716) 745 - 9129 **Extension:**

Fax: (716) 745 - 9129

E-Mail: tyonker@compuserve.com

Project Title: Lake Erie Shoreland Climate Change Initiative (Y2K Revision)

Project Category: Emerging Issues

Rank by Organization (if applicable): 0

Total Funding Requested (\$): 90,094 **Project Duration:** 1.3 Years

Abstract:

The Lake Erie Alliance is submitting a revised version of its 1999 Lake Erie Shoreland Climate Change Initiative. Under the revised initiative LEA will develop a framework for the protection of shorelands and lake influenced wetlands that emerge as Lake Erie water levels fall in response to predicted global climate change. LEA and its collaborators will prepare materials and a display describing the effects of climate induced water level reductions on shorelands and emerging wetlands; develop and test a climate change driver and human population module that will be added to the Lake Erie System Model; review legal and constitutional impediments to the protection of emerging shorelands and wetlands; conduct basinwide meetings to present project findings and recommendations to protect emerging shorelands and wetlands; and prepare a summary publication with project results that can be applied elsewhere within the Great Lakes Basin Ecosystem.

Geographic Areas Affected by the Project**States:**

<input type="checkbox"/> Illinois	<input checked="" type="checkbox"/> New York
<input checked="" type="checkbox"/> Indiana	<input checked="" type="checkbox"/> Pennsylvania
<input checked="" type="checkbox"/> Michigan	<input type="checkbox"/> Wisconsin
<input type="checkbox"/> Minnesota	<input checked="" type="checkbox"/> Ohio

Lakes:

<input type="checkbox"/> Superior	<input checked="" type="checkbox"/> Erie
<input type="checkbox"/> Huron	<input type="checkbox"/> Ontario
<input type="checkbox"/> Michigan	<input type="checkbox"/> All Lakes

Geographic Initiatives:

<input type="checkbox"/> Greater Chicago	<input checked="" type="checkbox"/> NE Ohio	<input type="checkbox"/> NW Indiana	<input checked="" type="checkbox"/> SE Michigan	<input checked="" type="checkbox"/> Lake St. Clair
------------------------------------------	---------------------------------------------	-------------------------------------	-------------------------------------------------	----------------------------------------------------

Primary Affected Area of Concern: Maumee River, OH

Other Affected Areas of Concern: Ashtabula, OH
 Black River, OH
 Buffalo River, NY
 Clinton River, MI
 Cuyahoga River, OH
 Detroit River, MI
 Niagara River, NY
 Presque Isle Bay, OH
 River Raisin, MI
 Rouge River, MI
 St. Clair River, MI
 Wheatley Harbor, ON

For Habitat Projects Only:**Primary Affected Biodiversity Investment Area:** Lake St. Clair/Detroit River

Other Affected Biodiversity Investment Areas: Western Lake Erie/Oak Openings
 Presque Isle

The project addresses habitat protection as a cross cutting issue related to climate change. Additional BIA's are likely to be identified or change as new barrier beaches and wetlands emerge as a result of lowered Lake Erie water levels.

Problem Statement:

Land use is emerging as the primary stressor affecting the future health of the Lake Erie Basin Ecosystem and the Great Lakes Basin Ecosystem as a whole. The International Joint Commission Lake Levels Reference Study in 1993 concluded that restrictions on shoreline development and improved land use practices were more likely to protect Great Lakes shorelines and wetlands than the most sophisticated and expensive of technological fixes or complex structural water level control regimes. SOLEC has consistently treated land use practices as indicators of sustainability within the Great Lakes Basin Ecosystem. The Lake Erie LaMP Public Forum concluded very early in its deliberations that improved land use practices would support key ecosystem objectives for the restoration of impaired beneficial uses of Lake Erie. The Forum established a Land Use Task Group to explore innovative land use practices. The Lake Erie LaMP Ecosystem Objectives Subcommittee has developed a Lake Erie System Model that now clearly shows shoreline and tributary land use practices to be the most important of the drivers affecting the health of Lake Erie's physical, chemical and biological systems.

The predicted impact of global climate change will further sharpen the focus on land use practices within the Lake Erie Basin Ecosystem. Global climate change was added as an emerging issue in the IJC Lake Levels Reference Study and is now included as an emerging issue in the Lake Erie LaMP 2000 Report. The impact of predicted climate change on the Lake Erie Basin Ecosystem will be significant and may already be occurring. Anticipated changes include increased air and water temperatures, increased evaporation, reduction in water levels (2 meters or more), displacement of shoreline (2-3 km in the western basin), and the reduction of ice cover. No one has adequately described for the public what Lake Erie might look like under a 2xCO₂ global climate change scenario. Should levels drop two meters or more, extensive lake

influenced wetlands and barrier beaches will emerge lakeward of the current shoreline. It is not clear who will own this property or whether it can be protected from exploitation and development.

Following the 1926 landmark U.S. Supreme Court decision in *Village of Euclid (OH) v. Ambler Realty Co.*, 272 U.S. 365, that upheld the constitutionality of zoning, the practice of planning and regulating land use quickly became established throughout the United States. But the regulation of private shoreline uses for the common good continues to arouse the concerns of U.S. and Canadian property owners and ratepayers who believe that all shoreline property rights belong to the land owner of record. The fact that almost all of the U.S. and significant reaches of the Canadian shoreline of Lake Erie are privately owned makes the problem of public access and restoration of natural shorelines a most intractable problem. There is limited information about federal, state and provincial laws and constitutional provisions that would govern the ownership of shorelands and wetlands that will emerge as lake levels fall. The new Ohio Coastal Zone Management Plan, for example, leaves questions about public ownership beyond the "natural shoreline". Will development be allowed in these emerging lands that includes dredging and the extension of infrastructure improvements such as roads, sewers, water and energy distribution systems?

How to deal effectively with the enormity of the problems resulting from unsustainable land use practices at the lakeshore is daunting. A comprehensive effort to encourage basinwide "Smart Growth" development policies is obviously needed. However, a smaller, more discreet effort to protect an important component of the Lake Erie Basin Ecosystem would seem to be most appropriate, i.e., the protection of emerging shorelands and wetlands that result from falling Lake Erie water levels under a 2XCO₂ climate change scenario.

Proposed Work Outcome:

The Lake Erie Alliance proposes the Lake Erie Shoreland Climatic Change Initiative (Y2K Revision) which will develop an overall framework to protect emerging Lake Erie shorelands and wetlands resulting from the predicted lowering of Lake Erie water levels caused by global climate change. LEA will prepare descriptive materials and a display that depict in laymen's terms climate changes that are likely to occur in the Lake Erie Basin Ecosystem as a result of global climate change, especially those changes that will lead to lowered lake water levels and the emergence of new shorelands and wetlands. LEA will collaborate with the Lake Erie LaMP Ecosystem Objectives Subcommittee to develop, test, and demonstrate a climate driver and human population module that will add texture to the Lake Erie System Model. LEA and its collaborators will review federal, state and provincial laws and constitutional provisions relating to the ownership of shorelands and wetlands that emerge as a result of lowered lake levels. LEA will meet with communities throughout the Lake Erie Basin Ecosystem to present its findings and make the case for protecting the emerging shorelands and wetlands. LEA will develop a list of techniques that can be used by communities to insure that such lands are protected for future generations.

Finally, LEA will publish a report on Climate Change, Shoreland Emergence and the Lake Erie Basin Ecosystem. The conclusions and recommendations contained in the publication should apply to the other Great Lakes and the Great Lakes Basin Ecosystem.

Project Milestones:**Dates:**

Project Start	10/2000
Attend LaMP Ecosystem Obj. Mtgs.	10/2000
Complete Update/Lake Erie System Model	12/2000
Complete Shoreland Ownership Review	03/2001
Complete Display/Information Materials	05/2001
Conduct Lake Erie Basin Meetings	09/2000
Complete Report and Recommendations	12/2000
Project End	12/2000

☒ Project Addresses Environmental Justice

If So, Description of How:

The refinement of the Lake Erie System Model will incorporate a socio-economic and socio cultural human population module that will more adequately describe and increase sensitivity to the relationship between human beings and the other physical, chemical, and biological components of the Lake Erie Basin Ecosystem. Changes within the physical, chemical, and biological components of the Lake Erie Basin Ecosystem may result in human responses to changing risks to human health that are socio-economically and culturally based.

☒ Project Addresses Education/Outreach

If So, Description of How:

The basinwide meetings are intended to provide opportunities to educate the public in several communities about predicted impacts of global climate change on the Lake Erie Basin Ecosystem, the resulting emergence of new shorelands and wetlands, and techniques that can be used by communities to protect those emerging shorelands and wetlands from exploitation and development. Informational materials, the display and the refined Lake Erie System Model will be used extensively at each meeting and will be made available for use by LEA's member organizations and other interested groups. LEA will also attend meetings scheduled by the Environmental Protection Agency, Environment Canada and the Lake Erie LaMP in June and October 2000. These meetings will provide information to the general public about the LaMP 2000 Report and the development of ecosystem objectives for the Lake Erie Basin Ecosystem.

Project Budget:

	Federal Share Requested (\$)	Applicant's Share (\$)
Personnel:	49,875	16,625
Fringe:	12,469	4,156
Travel:	9,000	3,000
Equipment:	3,750	1,250
Supplies:	3,750	1,250
Contracts:	3,750	1,250
Construction:	0	0
Other:	7,500	2,500
Total Direct Costs:	90,094	30,031
Indirect Costs:	0	0
Total:	90,094	30,031
Projected Income:	0	0

Funding by Other Organizations (Names, Amounts, Description of Commitments):

The George Gund Foundation has previously pledged a dollar for dollar match of up to \$20,000 for project funds raised by the Lake Erie Alliance during the grant period ending June 30, 1999. LEA anticipates that its grant request for FY 2000-2001 will contain a similar provision.

LEA expects to approach the Tipp of the Mitt Watershed Council, Joyce Foundation and Mott Foundations for additional support to cover the basinwide meetings.

A proposal was previously made to Fairport Marine Corporation in Grand River, OH, to supply a new sailing vessel to serve as an administrative and travel platform for the project. Fairport Marine will be approached again should EPA fund the project. Travel costs would be reduced as a result.

Description of Collaboration/Community Based Support:

Lake Erie Alliance will collaborate with its Canadian and US network of member organizations to assist in organizing the informational meetings that are needed to present the case for protecting emerging shorelands and wetlands within the Lake Erie Basin Ecosystem.

LEA will also collaborate with EcoCity Cleveland, an organization that is working on a "SmartGrowth Policy" for the State of Ohio. EcoCity Cleveland will provide consulting services to LEA for the development of a statutory land planning/zoning/ownership framework that will be required to implement an emerging shorelands and wetlands protection program. A Canadian collaborator (possibly the Upper Thames Conservation Authority) will also be approached to assist in the legal review in Ontario.

LEA will continue to work with the Lake Erie LaMP Ecosystem Objectives Subcommittee and the Ministry of Natural Resources to refine the Lake Erie System Model to include a climate change driver as well as a socio-economic and socio-cultural human population module.

LEA also plans to consult with the Ohio Coastal Zone Management Project which had extensive involvement in the development of the Ohio Coastal Zone Management Plan.

Finally, LEA plans to consult with Environment Canada on scientific questions related to climate change within the Lake Erie Basin Ecosystem. The LEA project director has an extensive background in meteorology and climatology.